Early Marriage and Conflict: Evidence from The Biafran War

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Abstract

In developing countries, 1 in 3 girls is married before she turns 18 years, and 1 in 9 before age 15 years. Beyond being a violation of human rights, this prevalence of early marriage is a major threat to development. In this paper, I explore variation provided by the Nigerian civil war, known as the Biafran War, to study the effect of conflict on early marriage of exposed women. Specifically, I perform a difference-in-difference analysis by exploiting variation across ethnicities and cohorts, which determine whether women were exposed to the war. I find that women exposed at ages of 10 to 15 years were, on average, 7% more likely to get married before they turn 16 than those who were not exposed. This finding draws attention to the fact that individuals may fall back on harmful cultural practices just to cope with the economic crises they face.

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1 Introduction

Despite the laws against it, early marriage remains widespread. Globally, approximately 15 million girls get married every year before they reach 18 years. In developing countries, 1 in 3 girls is married before she turns 18 years, and 1 in 9 before the age of 15 years (UNICEF, 2016).[1] Early marriage constitutes a violation of the Universal Declaration of Human Rights. It has significant negative impacts, not only on married girls and their children, but also on a wide range of development outcomes. For instance, early marriage decreases the educational attainment of married girls (Delprato *et al.*, 2015; Field & Ambrus, 2008); this limits their economic opportunities and empowerment, and thereby trap them in a cycle of poverty (Parsons *et al.*, 2015). It also exposes them to other forms of risk: early married girls are at a higher risk of sexual, physical and psychological violence (Erulkar, 2013); in addition to early child bearing and high fertility, they face a higher risk of maternal mortality (Women's Refuge Commission, 2016); the spousal age gap and their involvement in polygamous marriages also pose significant STD risk factors, such as HIV (Clark, 2004); the children of these girls are at greater risk of perinatal infant mortality and morbidity (WHO, 2013). These negative impacts explain why early marriage has entered the international and country-specific agendas for development: its eradication is seen as a necessary step to achieving the UN Sustainable Development Goals (SDGs) by 2030 (UNICEF, 2016).

In this paper, I study how exposure to conflict can lead to early marriage. Defining early marriage as marriage before age 16 years, I exploit variation across ethnicity and cohort to study the effect of the Nigerian Civil War, known as the Biafran War, on early marriage of exposed women. The Biafra war is well suited for the analysis in this paper because the war was mainly concentrated in the region of Biafra, hence, the direct exposure was restricted to the ethnic groups located in this region. Using retrospective variation across cohorts, the use of current geographical location to identify exposure to conflict could be misleading due to migration. However, ethnicity mitigates this potential concern since a person's ethnicity does not change even if she migrates. Thus, I use the differential evolution of early marriage across cohorts and ethnic groups as my main source of variation in the analysis.

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[1]Early marriage also affects boys, but to a lesser degree than girls: 82% of early married children in 2014 were girls and 12% were boys (UNICEF, 2014).

Biafra is a secessionist region in the southeastern part of Nigeria, dominated by the Igbo people. In May 1967, the Biafrans declared their independence; consequently, the government sought to counter this secession, and that led to a civil war. The war lasted for a period of two and half years (6 July 1967 - 15 January 1970), with a large number of casualties: in addition to about 100,000 military fatalities that were recorded, the severe starvation, which was used as the main weapon of war, led to the death of over one million Biafrans (Nwoko, 2014). Many Biafran women and girls were also sexually abused during this period (Obikeze & Mere, 1985).

Using data from the Nigeria Demographic and Health Survey, I compare the evolution of early marriage of exposed and non-exposed women using a difference-in-difference analysis to identify the effect of conflict on early marriage. The estimated result shows that Biafran women exposed to the war at ages 10 to 15 years were on average, 7% more likely to be married before age 16 years than their peers who were not exposed. This result is robust to many alternative specifications. Additional placebo analyses discard that it is driven by alternative time-varying omitted variables that create spurious correlation.

Aside being deeply embedded in socio-cultural and religious traditions in many developing countries, there are other factors that have been documented to exacerbate the prevalence of early marriage. For instance, gender roles and gender inequality perpetuate this practice (Girls Not Brides, 2015); studies have shown that women with little or no education are more likely to be married earlier (Ikamari, 2005; Bates *et al.*, 2007); the prestige attached to virginity and chastity, and consequent control of the sexuality of girls can also fuel this practice (Khanna *et al.*, 2013); early marriage is perceived to reduce family dishonour brought by premarital sex and pregnancies (Lee-Rife *et al.*, 2012); girls from poorer backgrounds are also more likely to marry earlier as families on low income may see it as a survival strategy (Mathur *et al.*, 2003). During humanitarian crises, these factors can interact, making the practice a more complicated phenomenon to curb. Armed conflicts trigger economic difficulties, weaken social institutions, and increase sexual violence and assaults targeting women and girls (Buvinic *et al.*, 2012). Families may use early marriage as a coping mechanism against economic hardships, and to ensure the safety of daughters against all forms of physical and sexual assaults which may lead to family dishonour. The breakdown of educational facilities and social networks during such crises also increase girls' vulnerability to be married earlier. Regardless of the channel of impact, my findings suggest that

conflict could compel individuals to resort to traditions and practices that can have a long run impact on their welfare.

This paper contributes to the literature by quantifying the effect of conflict on early marriage of exposed women. According to Girls Not Brides (2016), nine out of the top ten countries with the highest rates of early marriage are considered as fragile (affected by natural disaters and/or conflicts), ultimately hinting on a potential correlation between fragility and early marriage. However, evidence in this area is surprisingly scarce, leading to a gap in informed policy interventions. To the best of my knowledge, there are only two papers that study early marriage in the context of fragility, and these studies focus on natural disasters: Corno & Voena (2016) and Corno *et al.* (2016) use bride price custom to explain the impact of rainfall on age at marriage.[2] Yet, there is no such study on conflict.[3] This paper, therefore, bridges this gap by quantifying the degree to which conflict can trigger early marriage.

More broadly, this paper is related to other strands of literature. It is related to the literature that looks at the impacts of conflict on the marriage market (Shemyakina *et al.*, 2009; Jayaraman *et al.*, 2009; Schindler & Verpoorten, 2013; Saing & Kazianga, 2017). Some studies in this literature study the impact of conflict on age at first marriage. These studies generally find evidence that armed conflicts increase the age at first marriage for exposed women, which might seem to contradict my findings.[4] These contradicting findings could be explained by the fact that conflicts may have differential impacts across the age spectrum: age at first marriage could increase for adult women while the incidence of early marriage could increase for younger women. These differential impact can be attributed to changes in traditional gender roles and responsibilities as a result of breakdown of kinship due to death and forced displacement during conflict. While adult women may be inducted into political and civic participation, and take the roles of family heads, leading to a delay in their marriage, families may see the marriage of girls as a way of

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[2]Corno & Voena (2016) find that girls hit by a negative rainfall shock in their teenage ages have a higher probability of being married before the age of 18 years. Corno *et al.* (2016) find a positive effect of drought on early marriage in Africa and a negative effect in India. They argue that this differential impact can be explained by the difference in the direction of marriage payment traditions in these two regions: bride price in Africa and dowry in India.

[3]A working paper version of Valente (2013) includes some results on both educational attainment and early marriage of women who were exposed to the Nepalese conflict during primary school age. However, the analysis of early marriage is not included in the published version.

[4]An exception is Saing & Kazianga (2017) who find a decline in age at first marriage for girls who were exposed to the US bombings in Cambodia when they were ages of 7 to 12.

reducing their the economic burdens (Jayaraman *et al.*, 2009; El Jack *et al.*, 2003; Commission, 2016). Moreover, a decrease in the sex ratio may crowd out the marriage opportunities for older women and leave a higher proportion of them unmarried since younger brides who also enter the marriage market may be preferred by potential grooms (Shemyakina *et al.*, 2009).

This paper also contributes to the large literature on how households respond to economic shocks. While idiosyncratic shocks can be insured within the community through informal insurance arrangements between its members, economic shocks cannot (Dercon *et al.*, 2002). Households, therefore, have to rely on other coping strategies such as migration, consumption smoothing and off-farm employment. Yet, these strategies are often limited and not able to successfully overcome the vulnerability in consumption. Moreover, if economic shocks occur periodically, then households may devise ex-ante strategies that could help them smooth consumption over time, but such arrangements may not be accessible for unexpected shocks such as armed conflicts (Shemyakina *et al.*, 2009). The inability to cope during these times can have long term effect on their wellbeing such as their health and education (Rose, 1999; Jacoby & Skoufias, 1997). This paper suggests that households can also alter the timing of marriage to cope with economic shocks, which can have long run consequences on their welfare.

This paper also adds another dimension to the literature on gender roles and conflict. Most of the previous studies in this literature often focus exlusively on sexual and gender based violence (see, for example, La Mattina *et al.* (2014); Cohen & Nordås (2014); Østby *et al.* (2016)). This paper shows how the marriage of girls can be affected by conflict.

Finally, this paper is related to the studies on the impact of the Biafran War on exposed individuals. Akresh *et al.* (2012) looks at the impact of the war on the stature of exposed individuals; the author finds that individuals exposed to the war between birth and adolescence exhibit reduced adult stature, with largest impacts in adolescence. This paper shows that the marital decisions of these adolescent girls were also affected.

The remainder of the paper is organized as follows: in the next Section, I give more details on the channels through which conflict can trigger early marriage. Section 3 gives a background context of Nigeria, including the biafran war. In Section 4, I talk about the methodology used, including the data and the empirical strategy. Discussion of results is presented in Section 5 and the conclusion follows in Section 6.

2 The theoretical link between Early Marriage and Conflict

The effects of conflict on the exposed population could be very detrimental: forced displacement and migration, disruption of markets, infrastructure destruction and damage, and death of household members can lead to losses in assets and income (Buvinic *et al.*, 2012). In some instances, such as the Syrian war, the main weapon of war is starvation, leading to malnutrition and death of many civilians. Households may, therefore, devise several strategies to cope with these economic hardships; one of such ways is to alter marriage decisions. On one hand, early marriage may be seen as a means of acquiring wealth through the payment of dowries and bride price in order to smooth consumption.[5] In addition, getting a girl married reduces the family's burdens as the responsibilities of taking care of her are shifted to her husband. On the other hand, fewer economic opportunities and tight labour markets may make marriage costlier, hence marriage may be delayed till the recovery of the economy (Palloni *et al.*, 1996). However, studies have shown that while this is an option only available for wealthier families, poorer households could hasten the marriage of their girls to reduce the number of people to feed (Caldwell *et al.*, 1986).

Sexual violence and other forms of gender-based violence have become common features of violent conflicts, which are intended to achieve political and military objectives (Buvinic *et al.*, 2012). Rape and abductions of women and girls are used as weapons of war to intimidate, panic and displace populations. Some of these abductions sometimes lead to forced marriages as found in Iraq and Syria (UNFPA, 2015). Parents may therefore use early marriage as a way to protect their daughters from such violence and threats, whether perceived or real. Moreover, in traditional societies, given the value of virgin brides by potential marriage partners, early marriage could be used to avoid unwanted premarital sex and pregnancies which cause family shame and dishonor.

Conflict also decreases access to education: direct youth enrollment in the military, limited mobility, destruction of educational infrastructures and increased poverty may affect school attendance during conflicts (Justino, 2011; Shemyakina, 2006; Chamarbagwala & Morán, 2011). Some studies have also documented significant gender differentials, especially for girls (Shemyakina, 2011; Valente, 2013). Parents may turn to marriage as the second best alternative of securing

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[5]Bride price is the transfer of wealth from the groom's family to the bride's family whiles dowry is the opposite.

the future of their daughters when they are deprived of education. As a matter of fact, girls with no or little education are more likely to marry earlier than those who graduate from secondary school or higher (Ikamari, 2005; Bates *et al.*, 2007; Carmichael, 2011).

Conflicts decrease the sex ratio, which ultimately leads to marriage market squeeze (Brainerd, 2007; Abramitzky *et al.*, 2011; Schindler & Verpoorten, 2013). During conflicts, the population of men decreases as they are more likely to be killed or forced to join military forces (Buvinic *et al.*, 2012); consequently decreasing the number of potential suitors for women in the marriage market. Such a decrease may force many women to take the roles of family heads, leading to a change in the family practices and marriage arrangements in the society. On one hand, these could lead to a delay in the age of entry to marriage (Jayaraman *et al.*, 2009). On the other hand, the decrease in sex ratio can lead to a rise in polygamous marriages as widowed and unmarried women turn to other married men for support. In addition, the age of marriage can decrease in the sense that, more younger brides may enter the marriage market in order to capitalize their youth. This may crowd out older women as the younger ones may be preferable by potential grooms (Shemyakina *et al.*, 2009).

3 Nigeria Context

Nigeria is an important country to study the effect of conflict on early marriage since it is still experiencing the Boko Haram Insurgency. It is the most populous country in Sub-Saharan Africa, with more than 300 ethnic groups: the 3 major ethnic groups are the Hausas and the Fulanis (29%) occupying the northern part; the Yorubas (21%) in the southwestern part; and the Igbos (19%) found mainly in the southeastern part.

3.1 Marriage in Nigeria

Marriage is regarded as an important social, traditional and religious custom which gives an individual respect and status in the Nigerian society (George *et al.*, 2014). Besides, marriage is seen as more of a social contract made to ensure the continuation of family lines. There are

3 types of marriages in Nigeria; traditional marriage, religious marriage and civil marriage. A Nigerian couple can decide to take part in one or all of them, depending on their culture and wealth. Religious marriages, usually Christian or Muslim, are conducted according to the norms of the respective religious teachings, and take place in a church or mosque, while civil marriage takes place in a government registry office. As far as traditional marriage is concerned, marriage ceremonies are very diverse as different ethnic customs come into play. However, in general, they all start with the introduction ceremony which is a formal meeting between the two families involved. After the two families have been acquainted with each other, and the consent of the bride's family is given, customary tradition follows. This involves the payment of the bride price and the engagement ceremony.[6] Though traditional arranged marriages are becoming less common, parents do have a say in the choice of spouse. Families mostly prefer marriage from the same ethnicity or belief. The Nigerian civil law does not recognize polygamy - a marriage of one man to two or more wives. However, 12 out of the 36 states do practise it; all 12 are found in the north and are governed by the sharia law. Men tend to marry later than women: according to the 2013 Nigeria Demographic and Health Survey (NDHS), the median age at first marriage was 27 years as compared to 18 years for women. The delay in marriage for men could be explained by the fact that they bear the cost of marriage ceremonies, hence will prefer to wait till they have accumulated enough money for these expenses.

Even though data shows a 9% decline in the prevalence of early marriage since 2003, the practice is still widespread in Nigeria (Girls Not Brides, 2016). The Child Rights Act (2003) sets the minimum age of marriage at 18 years-old, however, only 23 of Nigeria's 36 states have taken concrete steps to implement the minimum age of marriage. According to UNICEF (2016), Nigeria is the 13th country with the highest rate of early marriage in the world: 43% of women aged 20-24 years are married before the age of 18 years and 17% by the age of 15 years. The predominance of early marriage varies from one region to another; concentrated in the North West, where about 76% of women are married before 18 years, as compared to 10% in the South East. Early marriage is deeply rooted in strong social and religious traditions, especially among the Hausas and Fulanis in the northwest (Fayokun, 2015). Early marriage in Nigeria is also exacerbated by

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[6]The bride price can take the form of money, cattle, wine, foodstuffs or other valuable items depending on the tradition of the ethnic group.

poverty and poor educational attainments. The abduction of girls by the Boko Haram insurgency also resulted in forced marriages (Segun & Muscati, 2014).

3.2   The Biafran War

Biafra was a secessionist region in the southeastern part of Nigeria, predominantly occupied by the Igbo ethnic group. Other minor ethnic groups in this region included the Efik, Ibibio, Annang, Ejagham, Eket, Ibeno, Ibibio, Ijaw, and Ogoja. Its secession from Nigeria led to the Biafran War from 6 July 1967 to 15 January 1970.

After the independence in 1960, Nigeria was divided into three regions which were formed along tribal lines. These regions were the Northern, mainly occupied by the Hausas and the Fulanis; the South West, mainly Yorubas; and the South East, majority being Igbos. These three groups had different political systems, which created some tensions among them. In 1966, there was a military coup, led by Major Chukwuma Nzeogwu, an Igbo, which resulted in the assassination of the northern leaders. Consequently, there was a counter coup by the Northerners in July of that same year, which led to the deaths of about ten thousand Igbos and other Biafrans living in the north, including the new head of state, Major Gen Johnson Aguiyi-Ironsi. This made many Biafrans living outside Biafra to flee to Biafra for refuge.[7] This ethnic tension, amidst the persecution of the Ibgos and the lost of control over the discovery of oil in the Niger Delta in the southeast, made the Igbos, led by Chukwuemeka Ojukwu, declare the independence of the Republic of Biafra on 30 May 1967. The federal government, immediately, placed an embargo on all shipping to and from Biafra and soon extended the blockade to oil. Afterwards, the government launched a police action to reclaim the region and this led to the start of the war in July 1967. The blockade of food supply led to severe famine in Biafra, leading to widespread malnutrition and devastation among adults and children (Miller, 1970). The war received one of the highest humanitarian interventions in history. However, relief efforts were very limited as the amount of food provided was not sufficient to meet the demands of victims (Aall *et al.*, 1970).[8] The war

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[7]It is estimated that Biafra received 1.5 million refugees once the war started (Aall *et al.*, 1970).

[8]Initially, no relief agency was allowed in Biafra, till late 1968, when the first international relief operations were launched.

ended in 15 January 1970, after the Biafrans surrendered to the Nigerian government.

Over the two and half years of the war, there were a large number of casualties: in addition to about 100,000 overall military fatalities that were recorded, about 1 to 3 million Biafra civilians died from starvation.[9] Women and children in the region also experienced several forms of physical, emotional and sexual violence. The federal military men categorically targeted women, and teenage girls and boys. The first tactic the military men used against women and adolescent girls living in the communities where they camped was sexual abuse. In some cases, these girls were moved to primary school compounds where they were brutally abused and raped. Girls returning from the market, streams, and farms were waylaid and assaulted, and shot when they refused (Obikeze & Mere, 1985). Some of the abductions of girls and women resulted in forced marriages. Insecurity from the fighting also brought about a halt in school activities, leading to the close down of schools (Uchendu, 2007a).

4 Methodology

4.1 Data

To examine the effect of conflict on early marriage, I use the Nigeria Demographic and Health Surveys (NDHS) in 1990 and 2003.[10] The NDHS is a national representative repeated cross sectional data conducted by the U.S. Agency for International Development (USAID), to provide demographic and health information. In all households, women aged 15-49 years and men aged 15-59 years were eligible to participate in individual interviews. For the purpose of this study, I use observations from individual interviews with eligible women born between 1950 and 1970. The main variable of interest is the age at first marriage: in all the surveys, women were asked to give the day, month and year of marriage so I am able to identify whether a woman got married early or not. To identify individual's exposure to the war, I need information on her ethnicity.

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[9]The daily death rate was estimated to be about 200 to 300; 70% of those who died were children (Nwoko, 2014).

[10]These are respectively the first and third surveys carried out in NigeriaThe second was in 1999, however, it is not publicly available.

However, the 1990 survey does not provide information on ethnicity. Therefore, I use respondent's language to determine her ethnicity.[11]

Figure 1 shows the distribution of age at first marriage. The age at first marriage is concentrated between 10 and 26 years. The most common age of marriage in the sample is 15 years which shows the high prevalence of early marriage in Nigeria. Since a very small proportion of women married before age 10 (less than 1%), through out the paper, I will assume that the start of early marriage is 10 years.

Table 1 shows some characteristics of women in the sample based on whether they got married early or not (before 16 years or not). All the statistics are consistent with the literature. Early married women are more likely to have no education or less likely to be educated (Delprato *et al.*, 2015). They were also less likely to be working at the time of the survey. Early married women are less likely to give birth before marriage, which supports the argument for the use of early marriage an an opportunity to avoid premarital pregnancies in traditional societies (Khanna *et al.*, 2013). They are also on average more likely to have more children than those who marry after 16, highlighting high fertility rates among early married women (Raj *et al.*, 2009). Among the three major ethnic groups (Hausa, Yoruba, and Igbo), early marriage is more prevalent among the Hausas, which is explained by religious differences among them. Early married women are more likely to be married to older men who are at least twice their age, more likely to be in polygamous marriages and more likely to be first wives. Their husbands are also less likely to be educated. In consistent with the literature, they are more likely to be living in rural areas and more likely to be poor (Otoo-Oyortey & Pobi, 2003; Mathur *et al.*, 2003).

4.2   Empirical Strategy

The main identification strategy relies on the use of birth year and ethnicity to identify woman's exposure to the war. I exploit the timing of the war, together with the fact that the war was mainly concentrated in the southeastern region (Biafra), hence, the direct exposure was restricted to the ethnic groups located in this region. The Biafra region was populated by the Igbo and other

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[11]According to sociolinguists, language can be used to identify individual's ethnicity (Shah, 2015).

minority ethnic groups (Efik, Ibibio, Annag, Ejagham, Eket, Ibeno, Ibibio, Ijaw, Adoni and Ogoja), henceforth, I shall refer to these ethnic groups as the Biafra ethnic group. I perform difference-in-difference analysis using ethnicity and birth cohort to identify the treatment and control groups. Some previous studies estimating the impact of conflict on various outcomes measure variation in conflict intensity using geographical unit. This measure could have some limitations when using retrospective analysis across cohorts since current geographical location can be sensitive to migration. War could displace people, and in patrilocal societies such as Nigeria, marriage is often accompanied by migration to the husband's place. Without having migration history, war exposure could be classified incorrectly. The use of ethnicity rather than geographical units mitigates some of these potential concerns since a person's ethnicity does not change even if she migrates.

The treatment group consists of women who were born from 1952 to 1959 (10-15 years old during the period of the war) and from the Biafran ethnic group as defined above.[12] The control group consists of two subgroups; those who were of the same age as the treatment group during the war but from an ethnic group outside Biafra, and women who were born from 1960 to 1969 (10-15 years old in 1975 to 1979).[13]

I hypothesize differential impact of the war for girls who were below the age of 16 during the period of war and those who were below 16 afterwards: the early marriage decision of the former should increase whiles that of the latter should not be affected.[14] To analyze the impact of war on early marriage, I estimate the following equation:

$$Y_i = \beta_0 + \beta_1 \mathbb{1}\{ethnicity_i = B\} * \mathbb{1}\{cohort_i = C\} + \phi X_i + \gamma_{r(i)} + \theta_{e(i)} + \lambda_{t(i)} + \delta_{s(i)} + \epsilon_i \qquad (1)$$

The outcome variable, Y_i equals 1 if woman i, living in region r, belonging to ethnicity e, and born in year t got married before 16 years, and 0 otherwise. The independent variable of interest, $\mathbb{1}\{ethnicity_i = B\} * \mathbb{1}\{cohort_i = C\}$ is an indicator for if a woman's ethnicity is biafra and belongs

[12]Since the war ended in mid-January of 1970, I only consider 1967 to 1969 as my war years. In one specification, I added 1970 and the results reduce by 2%, yet significant. Results are available upon request.

[13]These cohorts were either not born or too young to be married at the time of war.

[14]The conventional difference-in-difference analysis measures time periods as before and after treatment, however, the dataset used in this paper is not retrospective enough for comparison between those who were below 16 years during the war and those before the war.

to the war cohorts (10-15 years in 1967-69). X_i is a vector of woman characteristics such as education, religion and place of residence. γ_r, θ_e, λ_t and δ_s are regional, ethnicity, year of birth and survey rounds fixed effects. Education level is endogenously determined by marriage since early married girls are more likely to drop out of school to perform marital duties. I control for this endogeneity by using compulsory education of nine years as a measure of education level. Assuming that education begins at the age of 6 years and there is no repetition, then, by the time the girl gets to the age of 16 years, this education level should have been completed.[15] The coefficient of interest is β_1 as it measures the full impact of the war for the exposed ethnicity for a given cohort. The equation is estimated by OLS and standard errors are clustered at the ethnicity level.

5   Results

The results from equation 1 are shown in table 2. In all even-numbered columns, I control for ethnicity time trend to capture differences between ethnic groups across time. The main result is presented in column 1. The estimated coefficient (War Cohort * Biafra) indicates that girls who were of the Biafran ethnicity and lived during the period of war were 7% more likely to be married before the age of 16 years than their age mates who were not exposed to the war. In column 2, when I control for ethnicity time trend, the result increases to 10%. Even though the war was concentrated in the Biafran region, the main ethnic groups involved were the Biafrans and the ethnic groups found in the north (Hausas and Fulanis). To ensure that the results are not driven by any particular ethnic group, I split the Non-Biafran ethnic groups into ethnic groups found in the North and those found in the west.[16] I then re-estimate equation 1, using ethnic groups in the north and in the west as ethnic groups in the control group in separate estimations. Results are shown in columns 3 to 6. In all columns, the results are fairly similar to the baseline results, indicating that the findings are not driven by any particular ethnic group. The signs of the controls are consistent with literature even though some are not statistically significant. These results

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[15]Similar approach was used in Shemyakina *et al.* (2009)

[16]During and after Nigeria independence in 1960, the country was divided into 3 regions, namely, the Northern, Western and Eastern Regions.

are consistent with the hypothesis that, in times of conflict, early marriage prevalence goes up.

Placebo tests - Impact of the conflict on early marriage in the absence of the conflict.
The difference-in-difference estimation is only plausible under the assumption that in the absence of conflict, the unobserved differences between treatment and control groups are constant over time. It is impossible to test if unobverved time-varying omitted factors are correlated with treatment, however, one can test whether there are differences in time-varying observables correlated with future conflict before the start of the conflict. I also do placebo on ethnic groups that were not directly exposed to the war with the assumption that their marital decisions should not be affected.

(a) Impact of the conflict on non-exposed cohorts
Here, I test the validity of the assumption of the difference-in-difference estimator. The data used in this paper is not retrospective enough to test the differences in pre-conflict trend, so what I do is post-conflict trend. If the results truly reflect the relationship between early marriage and conflict, then there should not be any difference in early marriage between non-exposed cohorts from the biafran ethnicities and other ethnicities. I re-estimate equation 1 for several cohorts specifications in a moving window defined by years. More specifically, I estimate the following equation

$$Y_i = \beta_0 + \beta_{1c}\mathbb{1}\{ethnicity_i = B\} * \mathbb{1}\{cohort_i = C_{[1967+c-1969+c]}\} + \phi X_i + \gamma_{r(i)} + \theta_{e(i)} + \lambda_{t(i)} + \delta_{s(i)} + \epsilon_i \quad (2)$$

where Y_i and $\mathbb{1}\{ethnicity_i = B\}$ are defined as in equation 1. $\mathbb{1}\{cohort_i = C_{[1967+c-1969+c]}\}$ equals 1 if a woman was 10-15 years during the period of $[1967 + c$ to $1969 + c]$ and 0 if 10-15 years in $[1975 + c$ to $1979 + c]$ for $c = 0, 1, ..., 5$ years. Thus if $c = 0$, then the cohort specification is the same as in the original estimation. I plot the estimates for each specification in Figure 2(c). The graph shows that as we move away from the war years, the effect of the conflict decreases and becomes statistically insignificant, showing that results are not driven by time varying omitted factors.

(b) Impact of the conflict on non-exposed ethnic groups

In this subsection, I test the hypothesis that the war should not have any effect on the early marriage decisions of ethnic groups that lived outside the Biafra region since they were not directly affected. I, therefore, drop the main war-exposed ehnic group (the Biafrans) from the sample and re-define new treatment and control ethnic groups. The new treatment ethnic groups comprise of all ethnic groups found in the west as they were not largely involved in the war, and the new control ethnic groups are the Hausas and the Fulanis found in the North.[17] The definition of exposed and non-exposed cohorts remain the same as in the main regression. I re-estimate equation 1 and the results are shown in table 3. The results show that the coefficient on the difference-in-difference term is not significant, which indicates that the war did not have any effect on non-exposed ethnic groups.

Robustness Checks

Alternative specifications of control cohorts

I show that the results are not driven by the choice of the control cohorts, by defining different control cohorts specifications. In the first specification I do, I keep the treatment cohorts as in the main results (10-15 in 1967-69) and change the control cohorts in a moving window defined by years, whiles maintaining the same distance as the initial control cohorts (10-15 in 1975-79). The results are plotted in figure 2(a). In the second specification, I still keep the treatment cohorts, but define new control cohorts with the same window gap as the treatment cohort and again keep moving the window. Results are shown in figure 2(b). In both figures, the results are fairly the same as the main results, implying that the results are not driven by the choice of the control group.

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[17]Akresh *et al.* (2012) uses similar approach on the analysis of the impact of the same conflict on the health of exposed children.

6 Conclusion

Nine out of the top ten countries with the highest rates of early marriage are considered as fragile (affected by conflict or natural disaster). This indicates some correlation between fragility and early marriage. However, the degree to which conflict and early marriage are correlated is under researched. In this paper, I provide an empirical evidence of the impact of conflict on early marriage. I exploit variation given by The Biafran War in Nigeria to identify a woman's exposure to war. The estimated results show that women who were exposed to the Biafran conflict were on average, 7% more likely to get married before they turned 16 years than those who were not exposed to the war. There are several possible channels that the Biafran war may have influenced the early marriage decisions of households. Though, identifying the channel of impact is beyond the scope of the paper, some of the possible reasons could be: 1) the use of early marriage as a survival strategy due to the severe famine imposed by the war in the region of Biafra (Uchendu, 2007a). 2) the use of early marriage as a protective mechanism against the rampant sexual violence in the region as a result of the war (Uchendu, 2007b).

Regardless of the channel of impact, the analysis is of policy relevance. It suggests that during conflict, households can resort to traditions that can have long term impact on their welfare. This indicates that the prevailing social norms of the society should not be overlooked during economic crises. Also, the eradication of early marriage requires policies that will relieve poverty on families as I have shown in this paper that, economic crises can shape the early marriage decisions of households. Even if early marriage laws cannot be enforced during conflict due to breakdown of institutions, post-conflict interventions such as empowering affected girls through education and vocational training could reduce the welfare lose of this harmful practice.

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Figure 1: The sample distribution of Age at First Marriage
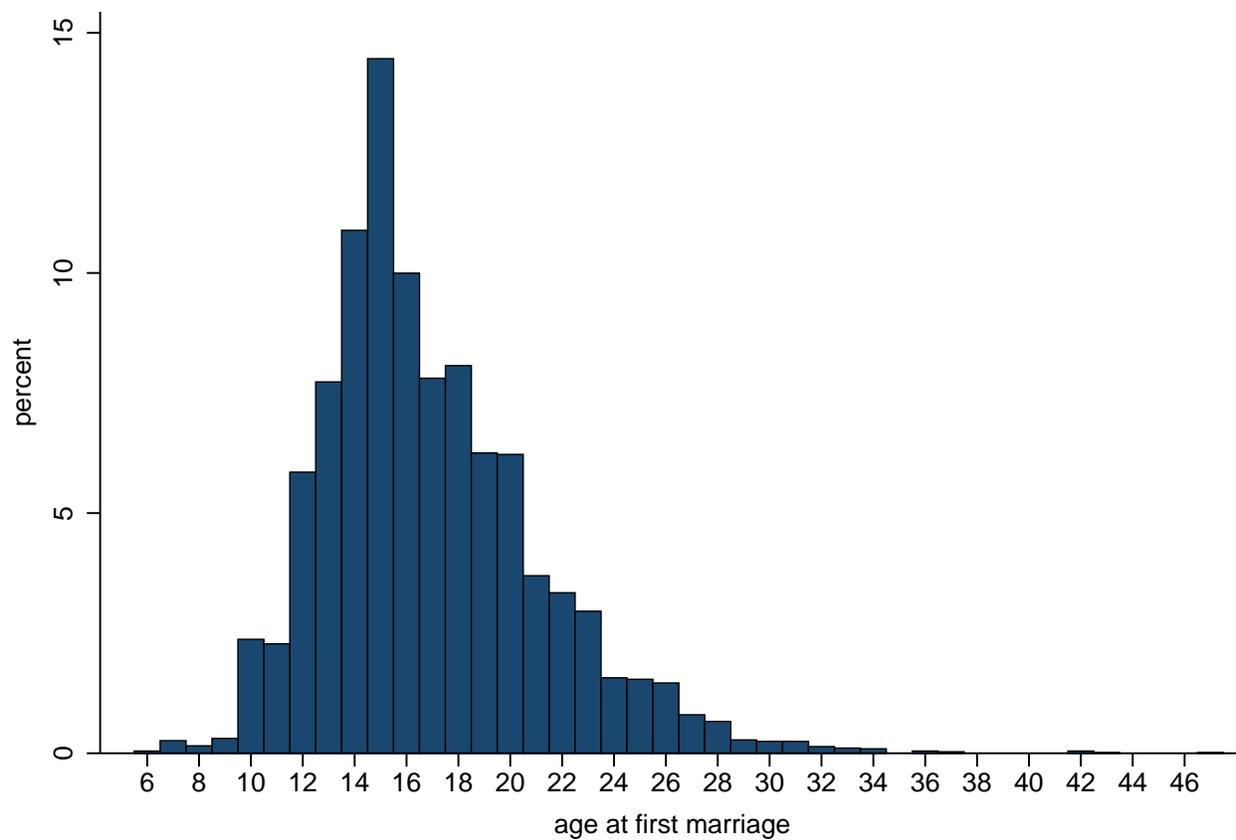
Source:1990 and 2003 Nigeria DHS survey. The sample is ever married women born btween 1950 and 1970

Figure 2: *Impact of Conflict on Early Marriage for Different Cohorts*

(a)

(b)

(c)
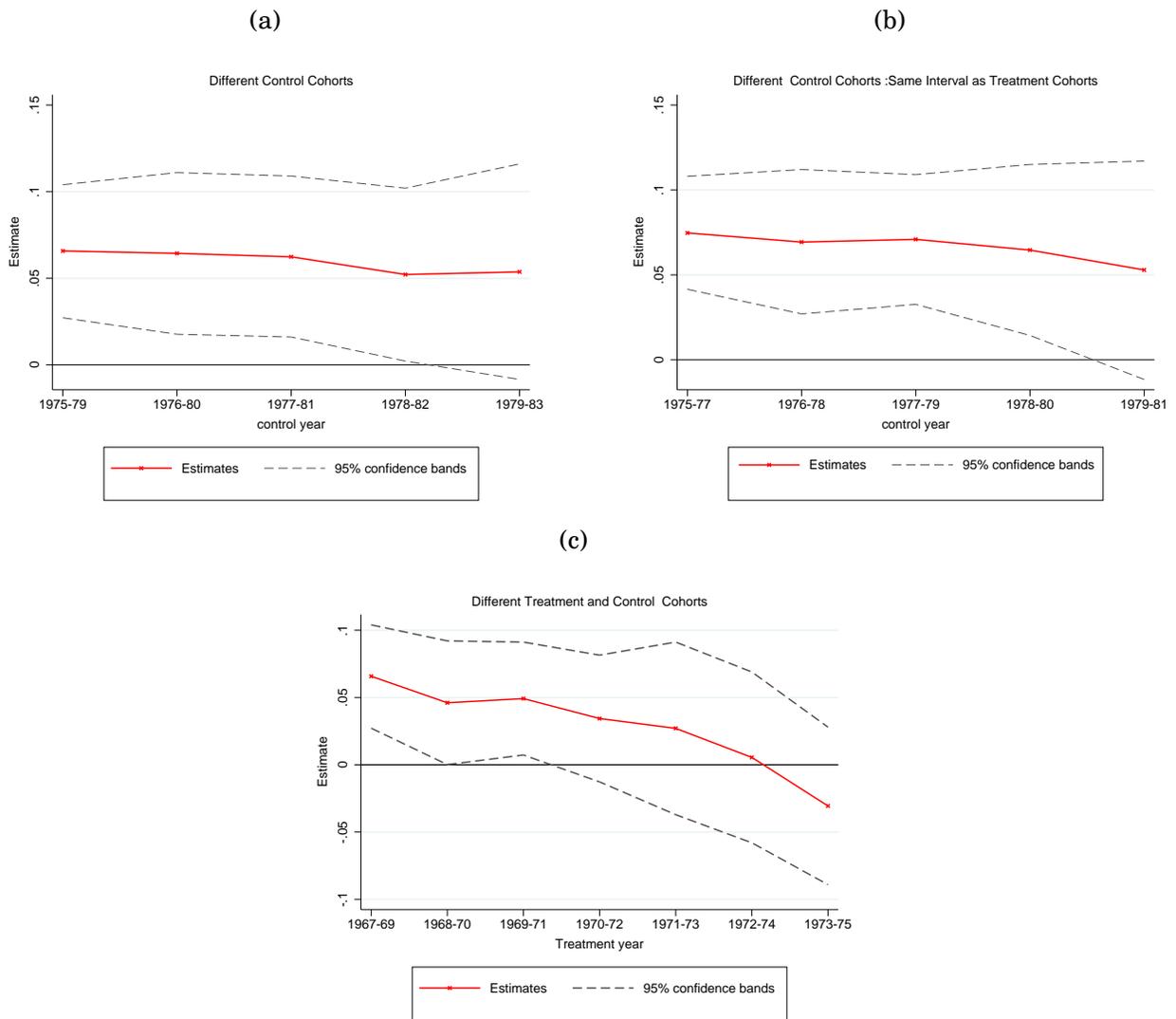
Note: Figure 2 plots the estimates of the effect of conflict on early marriage for different cohorts. In all the panels, the first point is the estimate of the main results in the paper. The subsequent points are the estimates as a result of moving either the control cohorts or both the control and the treatment cohorts. In panels (a) and (b), I keep the treatment cohorts
(10 - 15 in 1967-69) and keep moving the control cohorts as depicted on the horizontal axes. In panel (c), I keep moving the treatment cohorts as shown on the horizontal axis whiles also moving the corresponding control cohorts. For example the control cohorts for treatment cohorts 1967-69 will be 1975-79, that of 1968-70 will be 1976-80, and so on. The exposed and non exposed ethnicities are defined as in the main regression and same controls are used.

Table 1: Summary Characteristics of Ever Married Women by Age of Marriage

	Married before 16	Married at 16 or after	Difference
	(1)	(2)	(1)-(2)
Individual			
Level of Education (%)			
No education	81.5	47.6	33.9***
Primary	15.2	29.6	-14.***
Secondary	2.6	18.6	-16.0***
Higher	0.7	4.2	-3.5***
Average years of education	1.1	4.0	-2.9***
Working (%)	62.7	77.8	-15.1***
Mean age at first birth	16.6	20.4	-3.9***
Birth before marriage	4.6	11.8	-7.2***
Average number of children ever born	5.1	4.1	1.0***
Average number of children alive	3.8	3.4	0.4***
Major Ethncity (%)			
Hausa	50.3	12.6	37.7***
Yoruba	3.0	23.2	-21.4***
Igbo	7.7	19.1	-11.4***
Union			
Mean Partner's age	47.7	46.0	1.7***
Mean age gap	15.6	14.1	1.5***
Average years of partner's education	2.2	5.0	-2.8***
Polygamous marriage (%)	48.1	38.5	9.6***
First wife (%)	45.7	34.1	11.6***
Household			
Residence (%)	80.9	68.0	12.9***
Wealth			
Poor	54.7	31.5	23.2***
Middle	20.6	18.2	2.4
Rich	24.7	50.4	-25.7***
N	3429	4820	

Source: Autor's own calculation from 1990 and 2003 Nigerial DHS survey. The sample is ever married women born between 1950 and 1970

Table 2: Impact of Conflict on Early Marriage

	Biafran vrs Non Biafran		Biafran vrs North		Biafran vrs Others	
	(1)	(2)	(3)	(4)	(5)	(6)
War Cohort * Biafran	0.066***	0.104**	0.061**	0.095**	0.068***	0.111*
	(0.019)	(0.045)	(0.018)	(0.042)	(0.025)	(0.059)
Education	-0.164***	-0.162***	-0.214***	-0.216***	-0.145***	-0.142***
	(0.037)	(0.037)	(0.047)	(0.048)	(0.030)	(0.030)
Religion						
Protestant	-0.034	0.036	-0.370***	0.371***	-0.007	- 0.010
	(0.049)	(0.050)	(0.052)	(0.054)	(0.032)	(0.033)
Catholic	-0.022	-0.035	-0.378***	-0.381***	-0.036	- 0.008
	(0.049)	(0.050)	(0.056)	(0.057)	(0.034)	(0.035)
Traditional	-0.077	-0.076	-0.419***	-0.419***	-0.036	- 0.036
	(0.067)	(0.070)	(0.067)	(0.068)	(0.058)	(0.062)
None	-0.058	-0.068	-0.374***	-0.379***	-0.022	-0.033
	(0.064)	(0.063)	(0.045)	(0.043)	(0.048)	(0.046)
Rural	0.002	0.003	0.004	-0.006	0.027	0.027
	(0.020)	(0.020)	(0.031)	(0.030)	(0.021)	(0.020)
Region Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Year of Birth Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity Time Trends	No	Yes	No	Yes	No	Yes
N	6285	6285	3740	3740	4052	4052

Note: Table 2 shows the impact of conflict on the probability of getting married before 16. In columns (1) and (2), the analysis is between biafran and all other ethnic groups, in (3) and (4), it is between biafran and north ethnicities (huasas/fulanis) and in columns (5) and (6), it is between biafran and other ethnicities other than hausas and fulanis. Exposed cohorts is a dummy that takes value 1 if 10-15 years in 1967 -1969 and 0 if 10 -15 in 1975-1978. Biafran takes value 1 when individual belongs to igbo ethnicity or any other ethnicity in biafran region. Education equals 1 if individual has completed 9 years of education. Omitted category for religion is Islam. Standard errors are clustered at the ethnicity level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 3: Impact of Conflict on Early Marriage for Non Biafrans

	(1)	(2)
Placebo treatment	-0.011	-0.029
	(0.022)	(0.045)
Education	-0.154***	-0.149***
	(0.054)	(0.052)
Religion		
Protestant	-0.033	-0.035
	(0.046)	(0.047)
Catholic	-0.008	0.003
	(0.041)	(0.042)
Traditional	-0.081*	-0.074
	(0.093)	(0.102)
None	-0.106	-0.124
	(0.130)	(0.120)
Residence	-0.013	-0.010
	(0.017)	(0.018)
Year of Birth Fixed Effect	Yes	Yes
Ethnicity Fixed Effect	Yes	Yes
Regional Fixed Effect	Yes	Yes
Ethnicity time trend	No	Yes
N	4778	4778

Note: Table 3 shows the placebo test on ethnicities that were not directly affected by the war. The results are from estimation of equation 1 with a new definition for the the dummy eth_i and also dropping all biafrans from the sample. eth_i is now a dummy equal to 1 if individual belongs to any other ethnic group other than hausa or fulani, and 0 otherwise. Standard errors are clustered at the ethnicity level. * significant at 10%; ** significant at 5%; *** significant at 1%